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Evaluation of a brief 4-session psychoeducation procedure for high worriers based on the mood-as-input hypothesis

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ARTICLE INFO

ABSTRACT

Background & objectives: Given the ubiquity of worrying as a consuming and distressing activity at both clinical and sub-clinical levels, it is important to develop theory-driven procedures that address worrying and allow worriers to manage this activity. This paper describes the development and testing of a psychoeducation procedure based on mood-as-input hypothesis, which is a transdiagnostic model that describes a proximal mechanism for perseverative worrying. The study used nonclinical participants meeting IAPT criteria indicating GAD symptomatology.
Methods: In 4 sessions, participants in experimental groups received psychoeducation about the basic principles of the mood-as-input hypothesis and received guidance on how to identify and change worry-relevant goal-directed decision rules and negative moods. Participants in the psychoeducation conditions were compared with participants in a befriending control group.
Results: Psychoeducation about the model significantly reduced PSWQ scores at follow-up compared with the befriending control condition (a between-groups large effect size, Cohen's $d = 1.05$), and the homework tasks undertaken by the psychoeducation groups raised mood and reduced worry immediately. At follow up 48.2% of participants in the psychoeducation groups were below the recommended cut-off for identifying GAD symptomatology compared with 20% of participants in the control condition.
Limitations: This study was conducted on a small sample, high-worry student population, without a formal diagnosis.
Conclusions: This brief, low-intensity procedure is potentially adaptable to online or self-help procedures, and can be integrated into fuller cognitive therapy packages.

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1. Introduction

Worry is a consuming and distressing activity at both clinical and sub-clinical levels across a range of anxious psychopathologies. As such, it would seem important to develop theory-driven procedures that specifically address worrying and allow worriers to manage this activity. Compared with non-therapy controls, generic cognitive therapy (CT) techniques (i.e. any psychotherapeutic approach that is founded on a theory which aims to modify the cognitions that are deemed to play an important role in maintaining symptoms – see Hanrahan, Field, Jones, & Davey, 2013) appear to be effective in reducing pathological worry for diagnosable disorders such as Generalized Anxiety Disorder (GAD), but are

still associated with arguably modest recovery rates of 57% at 12-months follow-up (Hanrahan et al., 2013). Additional therapeutic procedures may be required to boost recovery rates. Given that an effective model for the successful amelioration of pathological worrying is likely to include elements from many theoretically valuable approaches (see Hanrahan et al., 2013), the aim of the present study was to test the effectiveness of a psychoeducation procedure based on a further theoretical approach to pathological and perseverative worrying, namely the mood-as-input (MAI) model (Meeten & Davey, 2011).

The mood-as-input hypothesis views decisions about whether to continue or terminate a task as based on interactions between the individual's 'stop rules' or decision rules for the task (i.e. what rules have been explicitly or implicitly deployed to define the goals of the task) and the real-time availability of information about whether those goals have been met (see Meeten & Davey, 2011 for a review). The hypothesis argues that perseverative activities such as

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worrying are frequently associated with goal-oriented decision rules that specify that the task must be completed as thoroughly and extensively as possible (known as "as many as can" stop rules or decision rules). However, the mood-as-input hypothesis specifies that an individual's concurrent mood is an important source of information by which goal-achievement is assessed. When applied to excessive or pathological worrying, the mood-as-input hypothesis predicts that worriers begin worrying by deploying goal-directed "as many as can" decision rules specifying that the task must be completed as thoroughly as possible, but the worrier's negative mood provides information that this has not been achieved, so worrying continues. These predictions have been substantiated in a number of analogue studies of worrying (see Meeten & Davey, 2011; for a review), and suggest that procedures designed to both identify and change goal-directed "as many as can" decision rules or alleviate negative mood should have the effect of reducing worry perseveration and severity. A consequence of this model is that designing an intervention that can shift a worrier away from the use of goal-directed "as many as can" stop rules and also develop strategies for managing negative mood will both help to alleviate the length and frequency of perseverative worry bouts.

The present paper describes the results of a psychoeducation procedure based on the mood-as-input model for excessive worrying in participants experiencing clinically-significant levels of worry. In a 4-session procedure, this study aimed to provide psychoeducation to participants about the basic principles of the mood-as-input hypothesis, provide guidance on how to identify worry-relevant goal-directed decision rules and negative moods, and provide advice about how to change their default decision rules and manage their moods. Participants in psychoeducation conditions were predicted to score significantly lower on Penn State Worry Questionnaire (PSWQ) scores than a befriending control group (Sensky et al., 2000) at the end of the 4-session procedure and at a 4-week follow-up. In particular, analyses were undertaken that would determine whether (1) psychoeducation to the mood-as-input model in itself leads to a reduction in worry, and (2) mood and stop rule interventions (following psychoeducation) have a greater effect than psychoeducation alone.

2. Method

The experiment was approved by the University of Sussex's Life Sciences and Psychology Cluster-based Research Ethics Committee.

2.1. Participants

2.1.1. Recruitment
Students at the University of Sussex completed the PSWQ. High worriers were identified by a score ≥62 and were invited to take part in the experiment. A cut-off of 62 was chosen because the cut-off required to sensitively and specifically distinguish individuals with GAD from individuals without GAD depends upon the sample (Startup & Erikson, 2006). Behar, Alcaine, Zuellig, and Borkovec (2003) found that a PSWQ score of 45 was a successful cut-off to distinguish treatment-seeking individuals with GAD from non-anxious individuals, but that a higher cut-off of 62 was required when differentiating individuals with GAD in a large student sample.

2.1.2. Study sample
Participants were deemed ineligible, and consequently were not invited to participate, if they did not have a score on the PSWQ of 62 or higher. See Section 2.1.1.

Following screening, 40 participants began the experimental study. Retention was good, with only one participant dropping out.

The final sample consisted of 39 participants who were predominantly female (n = 36), and had a mean age of 20.75 (SD = 1.28) (this gender balance in those participating in the experiment reflected the gender balance in the pool of participants eligible to participate which was 84% female and 16% male). Participants were paid £5 for each 45-min session, and were awarded £45 at the end of the experiment if all sessions and homework tasks were completed. A consort diagram is provided in Fig. 1.

2.2. Design

A mixed design was used. Participants had an initial meeting, during which consent was taken, baseline measures were administered and screening for suitability occurred. The participants met the experimenter once a week over five weeks (sessions one to five), with a sixth session four weeks later. The intervention occurred in sessions one to four, and sessions five and six were used to collect post intervention and follow up measures respectively. Participants were randomly allocated to one of four conditions (see the consort diagram shown in Fig. 1), and underwent each session on a one-to-one basis with the instructor. Participants in Groups MAI-1 and MAI-2 received two sessions (sessions 1 and 2) of psychoeducation about the mood-as-input model including an instructor-guided PowerPoint presentation, with session 1 presenting the MAI model of worry in general terms and session 2 focussing on developing a personalized version of this model (see below). For Groups MAI-1 and MAI-2, the two sessions of psychoeducation were followed by two sessions focused respectively on (a) lifting mood and (b) developing more helpful decision rules, with the order counterbalanced across groups (sessions 3 and 4). Group MAI_Bf received the two sessions of psychoeducation (sessions 1 and 2), followed by two sessions of befriending (sessions 3 and 4). Group Bf received four sessions of befriending. The two weeks of befriending experienced by Group MAI_Bf were similar in content to the first two weeks of befriending experienced by Group Bf. Thus, participants in Groups MAI-1, MAI-2 and MAI_Bf received psychoeducation in sessions 1 and 2, but in addition, those in Groups MAI-1 and MAI-2 were given two sessions that addressed mood and decision rules. Following the session on lifting mood and the session on changing decisions rules, participants in Groups MAI-1 and MAI-2 were asked to try out the strategies they had learnt during the following week on three occasions when they noticed that they were worrying.

Four intervention groups were included so that we could explore the role of mood-as-input psychoeducation and the role of mood-as-input derived exercises on worrying compared to a befriending control group. We included two groups with the exercises counterbalanced − lifting mood and changing decision rules − so that order effects could be examined, should the psychoeducation only group be found to differ significantly from the psychoedcuation plus exercises groups. If a difference was found, it would be useful to know whether it was helpful to learn about lifting mood before changing decision rules, or vice versa. Consequently, analyses were conducted with the two exercise groups collapsed (both had received the psychoeducation plus the exercises) with the expectation that the groups would be subdivided to see whether the order of presentation affected worry scores, should a significant difference be found between the psychoeducation only and the psychoeducation plus exercises groups. We also included a befriending control group so that we could control for the action of noticing one's worries (through the worry diary) and the non-specific effects of attending sessions.

Participants in the befriending condition were engaged in a discussion with the experimenter about neutral topics that